

# **BREAKDOWN UMBRELLA STAND**

## **BACKGROUND OF THE INVENTION**

### **1. Field of the Invention**

**[0001]** The present invention relates generally to a large-sized umbrella, such as a beach umbrella and a backyard umbrella, and in particular to a breakdown stand for the large-sized umbrella that steadily and stably supports the large-sized umbrella with a simple and breakdown structure allowing for adjustment by general consumers in accordance with weather conditions.

### **2. The Related Art**

**[0002]** Large-sized umbrellas, such as beach umbrellas and backyard umbrellas, are commonly used in outdoor activities as a measure for shading intense sunlight and protecting people from sun burn in long time staying outdoors. Most of the large-sized umbrellas, just like the regular umbrellas used primarily for sun sheltering, comprises a post having an upper end supporting a canopy that is selectively expanded to block sun light and a lower end fixed to a fixture, such as a garden bench or a table. The canopy has a large size, forming a large projection area for effectively shading sunlight. The large-sized canopy makes the umbrella unstable in windy condition for the pressure caused by winds induces large torque acting upon the lower end of the post. Thus, the umbrella may get down or tilt due to strong airflows in windy conditions.

**[0003]** A heavy stand or base to which the lower end of the post is attached effectively and stably holds the post and canopy in windy days. Tilting and falling down of the umbrella caused by strong winds can thus be eliminated. However, to ensure the stable support of the umbrella against winds, the stand must be of substantial weight, which means transportation manually is extremely difficult, especially for a single person. In most cases, two or more persons are required in moving the umbrella stand. This complicates the installation and operation of the umbrella.

**[0004]** Thus, it is desired to have an umbrella stand that overcomes the problems mentioned above.

### **SUMMARY OF THE INVENTION**

**[0005]** Therefore, a primary object of the present invention is to provide a stand for a large-sized umbrella that effectively and stably holds the umbrella against windy conditions.

**[0006]** Another object of the present invention is to provide a stand of large-sized umbrella having a breakdown structure for easy and ready movement by separated parts.

**[0007]** A further object of the present invention is to provide a stand for a large-sized umbrella, wherein the stand is adjustable in weight to fit for different windy conditions.

**[0008]** Yet a further object of the present invention is to provide a stand to which a large-sized umbrella can be readily mounted.

**[0009]** To achieve the above objects, in accordance with the present invention, there is provided an umbrella stand that receives, holds and supports a post of an umbrella in an upright manner. The stand includes a vertical stack of blocks, including a bottom block positionable on a fixed surface, a top block located above the bottom block and at least one middle block interposed between the top and bottom blocks. The blocks define bores aligned with each other for receiving a lower end of the post. Mateable pits and bosses are formed between adjacent blocks for positioning the blocks with respect to each other and releasably engaging the blocks with each other. Recesses are defined in a lower surface of each block to accommodate fingers of a person in handling and moving the blocks. A pin is formed in the bore for engaging a releasable spring-biased pawl arranged in the post thereby releasably coupling the post of the umbrella to the stand.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0010]** The present invention will be apparent to those skilled in the art by reading the following description of preferred embodiments thereof, with reference to the attached drawings, in which:

**[0011]** Figure 1 is an exploded view of an umbrella stand constructed in accordance with the present invention;

**[0012]** Figure 2 is a perspective view of the umbrella stand of the present invention;

**[0013]** Figure 3 is a perspective view of an umbrella stand in accordance with another embodiment of the present invention;

**[0014]** Figure 4 is an exploded view of a large-sized umbrella mounted to a stand in accordance with the present invention by an extension post arranged between the umbrella and the stand;

**[0015]** Figure 5 is an assembled view of Figure 4;

**[0016]** Figure 5A is an enlarged view of the encircled portion 5A of Figure 5;

**[0017]** Figure 6 is a perspective view of a large-sized umbrella directly mounted to the stand in accordance with the present invention;

**[0018]** Figure 6A is an enlarged view of the encircled portion 6A of Figure 6;

**[0019]** Figure 7 is a cross-sectional view of the umbrella stand of the present invention;

**[0020]** Figure 8 is a perspective view of an umbrella stand in accordance with a further embodiment of the present invention with which an externally threaded lower section of a post of the umbrella engage to support the post in an upright condition; and

**[0021]** Figure 9 is a perspective view of an umbrella mounted to the umbrella stand illustrated in Figure 8.

#### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

**[0022]** With reference to the drawings and in particular to Figures 1 and 2, an umbrella stand constructed in accordance with the present invention, generally designated with reference numeral 10, comprises a bottom block 12, preferably in the form of a disk as shown in the drawings and at least one middle block 14, also preferably in the form of a disk corresponding in size to the bottom block 12, and a top block 16, similarly having a disk configuration and corresponding in sized to the middle and bottom blocks 14, 12. The blocks 12, 14 ,16 are stackable over each other in sequence in a vertical direction to form the stand 10 with the bottom block 12 positionable on a fixed surface, such as ground.

**[0023]** It is noted that two middle blocks 14 are employed in the present embodiment, which will be respectively referred to as upper middle block and lower middle block. The lower middle block 14 is positioned on the bottom block 12, while the top block 16 is positioned on the upper middle block 14, with the upper middle block stacking on the lower middle block. All the disks 12, 14, 16 are of substantial weight whereby when the disks 12, 14, 16 stack over each other, a heavy and stable stand is formed.

**[0024]** All the disks 12, 14, 16 define central bores 18, 20, 22 that align with each other, as a unitary bore, for the insertion of a lower end (not labeled) of a post 24 of an umbrella 26 (see Figure 6). The umbrella 26, with the lower end of the post 24 inserted into the central bores 18, 20, 22, is held in a substantially upright manner, which in turn supports a canopy 28 in a desired location and orientation.

**[0025]** Also referring to Figure 7, the bottom disk 12 forms a retaining pin 32 inside and diametrically extending through the central bore 18. The retaining pin 32 is engageable with locking means of the post 24 of the umbrella 26 for retaining the post 24 inside the central bores 18, 20, 22 thereby coupling the umbrella 26 to the stand 10. This will be further described.

**[0026]** Each of the disks 12, 14 16 has opposite upper and lower faces 12a and 12b, 14a and 14b, 16a and 16b and the central bore 18, 20, 22 of the disk 12, 14, 16 extends between the upper and lower faces 12a, 12b (14a, 14b; 16a, 16b). The disks 12, 14, 16 are stacked so that the lower face of an upper one of the disks 12, 14, 16 rests on and is supported by the upper face of a lower one of the disks 12, 14, 16. In other words, the lower and upper faces of adjacent blocks physically engage and support each other. For example, the lower face 14b of the lower middle disk 14 is positioned on and supported by the upper face 12a of the bottom disk 12, the lower face 14b of the upper middle block 14 is positioned on and supported by the upper face 14a of the lower middle block 14 and the lower face 16b of the top disk 16 is positioned on and supported by the upper face 14a of the upper middle block 14.

**[0027]** The bottom face 12b, 14b, 16b of each disk 12, 14, 16 forms a plurality of recesses 12c, 14c, 16c for accommodating fingers of a person in handling, moving and assembling/disassembling the disks 12, 14, 16 whereby the fingers may not get damaged by being pinched between two disks 12, 14, 16.

**[0028]** A plurality of pits 12d, 14d is formed in the upper face 12a, 14a of each of the bottom disk 12 and the middle disks 14, while mateable bosses 14e, 16e extend from the lower face 14b, 16b of the middle and top disks 14, 16. The bosses 14e, 16e are snugly received in the pits 12d, 14d of the bottom and middle disks 12, 14. In other words, the pits and bosses of adjacent disks engage each other. For example, the bosses 14e of the lower middle disk 14 fit into the pits 12d of the bottom disk 12, the bosses 14e of the upper middle disk 14 fit into the pits 14d of the lower middle disk 14, and the bosses 16e of the top disk 16 fit into the pits 14d of the upper middle disk 14. The engagement between the bosses 14e, 16e with the pits 12d, 14d ensures proper positioning of the disks 12, 14, 16 with respect to each other to align the central bores 18, 20, 22 and also releasably retains the disks 12, 14, 16 together as a solid and heavy stand shown in Figure 2.

**[0029]** Although two middle disks 14 are interposed between the bottom and top disks 12, 16 in making the stand 10 in accordance with the present invention, it is apparent to those having ordinary skills to use different numbers of middle disks between the top and bottom disks 16, 12. For example and as illustrated in another

embodiment of the present invention shown in Figure 3 in which the stand is designated with reference numeral 10' for distinction, only a single middle disk 14 is interposed between the top and bottom disks 16, 12. This reduces the overall weight of the stand 10' but still effectively holding the post 24 in less windy conditions.

**[0030]** Also referring to Figures 4, 5 and 5A, a large-sized umbrella 26 is mounted to and supported by the stand 10 in accordance with the present invention. The umbrella 26 comprises a post 24 having an upper end to which a canopy 28 is mounted. This is well known and no further detail is needed.

**[0031]** The post 24 also has a lower end releasably mounted to an upper end of an extension post 30. A lower end of the extension post 30 is fit into the central bores 18, 20, 22 of the disks 12, 14, 16 of the stand 10 whereby the umbrella 26 is supported in position by the extension post 30 mounted to the stand 10. The lower end of the extension post 30 form a diametrically extending notch 34 that fit over and partially receives the pin 32 of the bottom disk 12, serving as a stop for further downward movement of the extension post 30 in the bore 18 of the bottom disk 12. Due to the existence of the middle and top disks 14, 16, the extension post 30 that are also partially received in the central bores 20, 22 of the middle and top disks 14, 16 is substantially held in position in an upright manner.

**[0032]** The upper end of the extension post 30 defines an axially extending hole (not labeled) substantially coaxial with the post 30 to receive a lower end of the post 24 of the umbrella 26. Diametrically aligned holes (not labeled) are defined in sidewall of the extension post 30 that delimits the axially extending hole for receiving the lower end of the post 24. A pin 35 extends through the diametrically aligned holes. A spring-biased pawl 36 is arranged inside the post 24 of the umbrella 26 whereby when the lower end of the post 24 is fit into the axially extending hole of the extension post 30, the pawl 36 is biased by spring force to engage and maintain the engagement with the pin 35 thereby coupling the post 24 to the extension post 30. Any known release means (not shown) is incorporated to selectively release the pawl 36 from the pin 35 to allow separation of the post 24 from the extension post 30.

**[0033]** The lower end of the post 24 defines a diametrically extending notch 33 that partially receives the pin 35 in fitting the post 24 into the axially extending hole of the extension post 30.

**[0034]** Alternatively and as illustrated in Figures 6 and 6A, the extension post 30 used in the previously described embodiment can be eliminated and the lower end of the post 24 of the umbrella 26 is directly fit into and through the central bore 22, 20, 18 of the disks 16, 14, 12 of the stand 10. The spring-biased pawl 36 directly engages the pin 32 formed inside the bore 18 of the bottom disk 12 and the notch 33 partially receives the pin 32 thereby securely coupling the post 24 to the stand 12. Similarly, the pawl 36 is selectively disengaged from the pin 36 by the release means that is not shown in the drawings to separate the umbrella 26 from the stand 10.

**[0035]** The upper face 16a of the top disk 16 can be formed with decorative patterns 40 that facilitate the consistency of the stand 10 with the background scene.

**[0036]** Referring to Figures 8 and 9, the post 24 may be alternatively attached to the stand 10 by means of threading engagement. For example, the post 24 forms an external threading 24a around a lower section. The central bore 18 of the bottom block 12 of the stand 10 forms an internal threading 18a that corresponds to and is engageable with the external threading 24a of the post 24 whereby when the post 24 is inserted into the bore 18 and rotated to tighten the threading engagement, the post 24 is securely fixed to the stand 10. If desired, the bores 20, 22 of the middle blocks 14 and the top block 16 can be correspondingly threaded. However, care must be exercised to ensure the continuity of the threading of all the bores 18, 20, 22.

**[0037]** Although the present invention has been described with reference to the preferred embodiments thereof, it is apparent to those skilled in the art that a variety of modifications and changes may be made without departing from the scope of the present invention which is intended to be defined by the appended claims.